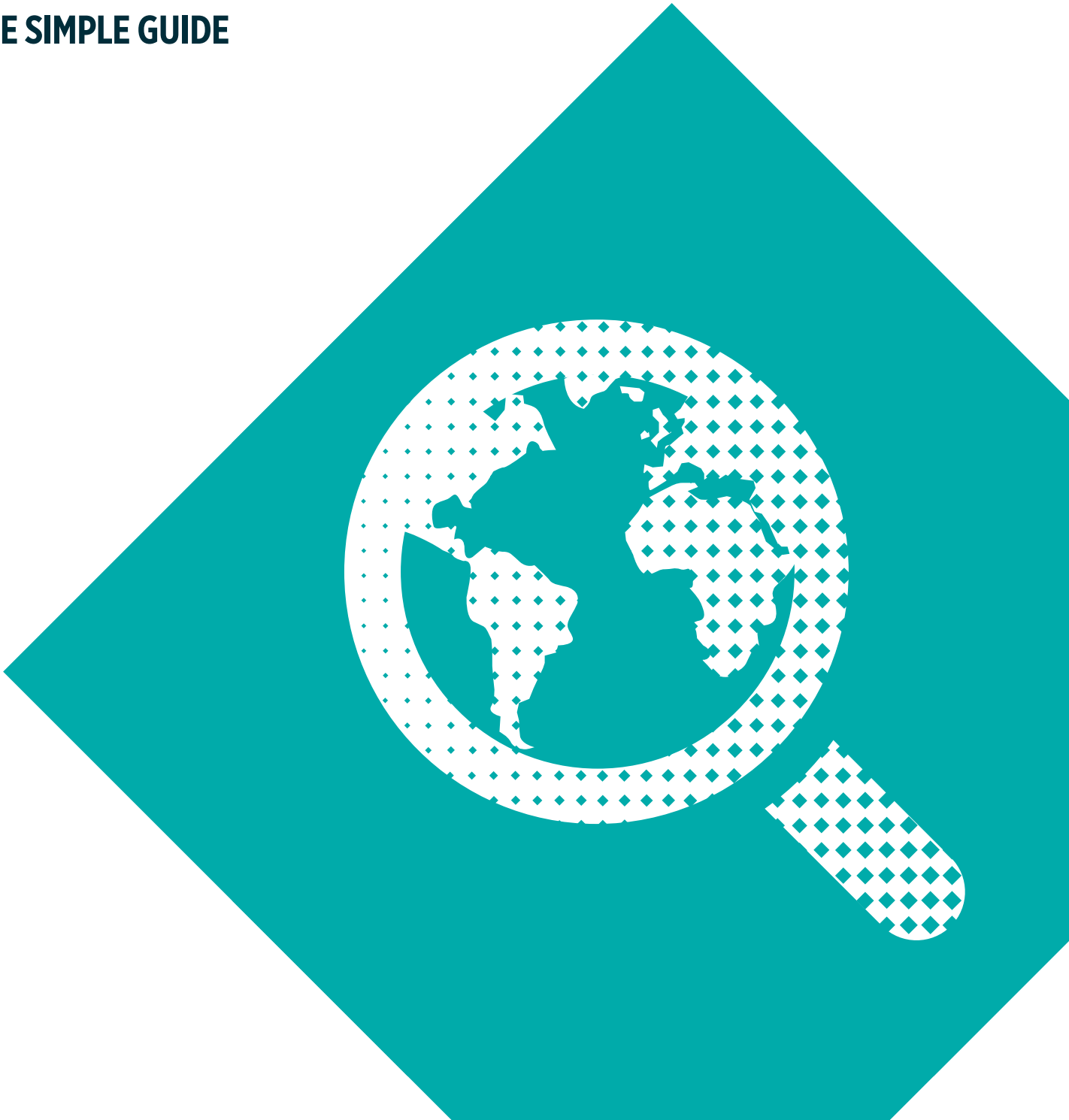
PENSIONS AND
LIFETIME SAVINGS
ASSOCIATION

October 2015

FOREIGN EXCHANGE (FX)

MADE SIMPLE GUIDE



ACKNOWLEDGEMENTS

We would like to thank HSBC Bank for its help producing and sponsoring this guide.

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1 FOREWORD

HSBC is one of the largest banking and financial services organisations in the world. We are recognised as one of the world's major foreign exchange (FX) houses and offer a fully integrated global FX service across all time zones from our three main regional centres of London, Hong Kong and New York, with access to most currency markets via our network of regional offices. We recognise the increased significance of foreign exchange markets to the pensions sector and as such are proud to be associated with the Pensions and Lifetime Savings Association Made Simple Guide.

We bring you a comprehensive offering, leveraging the Bank's global presence, strong balance sheet and diverse franchise to meet your needs. Our commitment to you is to understand your business and tailor flexible solutions that work for your pension scheme as it continues to evolve and regulatory changes occur.

HSBC strives to work in partnership with clients, and have a broad platform which is extremely relevant to the pension fund sector from basic transactional products through to bespoke solutions. By listening to you we have developed tailored propositions ranging from liquidity and yield optimisation through risk management and even outsourcing solutions, all driven by your needs. In FX specifically, our commitment to the pensions sector has been borne out by the development of our Local Government Pension Scheme FX Platform aligned to the framework agreement and our Global Disbursements local currency payments for pension funds.

We hope this guide to FX acts as a useful starting point for understanding your schemes' currency exposure, and we look forward to our continuous engagement with the pensions sector for many years to come.

Frederic Boillereau
Global Head of FX & Commodities
HSBC Bank plc

Despite the efficiency of electronic trading, the FX markets continue to offer up new surprises with global influences creating unprecedented volatility, witnessed already this year by the surprise SNB EURCHF support removal, Grexit news and with geo-political challenges around the world including Britain's referendum on Europe. With our FX expertise and business-wide support of pension funds, HSBC are well placed to help pension funds navigate these choppy waters.

Due to the structural nature of the FX market as counterpart to counterpart trading instead of via an exchange, it has historically been perceived as having a lack of transparency. This has in turn led to reduced confidence in pricing and service provision. Recent advances in technology, increased regulation and scrutiny of the market and practices have been welcomed by most banks, especially HSBC. We have for many years aimed to provide our clients with as much transparency and guidance on market pricing as possible. This has continued with our commitment to develop robust FX products and benchmarking is prevalent amongst our client execution.

HSBC are delighted to publish this Made Simple Guide to Foreign Exchange in partnership with the Pensions and Lifetime Savings Association and hope you find it a useful tool for future decision-making as well as a handy reference document.

Nic A Jones
Fund Solutions Foreign Exchange Sales
HSBC Bank plc

2 INTRODUCTION

HOW ARE UK PENSION FUNDS IMPACTED BY CURRENCY MOVES?

With UK interest rates at an all-time low and domestic equity markets underperforming, UK pension funds have had to increase the globalisation of investment portfolios. Diversification of investments into global assets, while helping to manage risk, will also involve the need to exchange currencies –and as such pension funds should be aware of the significant impact to returns that currency movements can have, both positively and negatively. Without careful management of the execution, FX costs can spiral out of control, seriously impacting an investment portfolio.

FX cost has historically been hard to quantify, due to its nature as an over-the-counter (OTC) product based on spread as opposed to an exchange-based commission model like global equity markets. Increased transparency over FX costs and control of them is an essential part of pension fund management as the requirement for greater overseas assets continues to increase.

Although FX plays an important part in pension fund management, currency can be involved in multiple ways – including transactional, hedging and as an asset class.

The focus on Fixed Income, Currencies & Commodities (FICC) markets has increased in recent years and since the Chancellor established the Fair and Effective Markets Review (FEMR)[1] in June 2014, there has been increased scrutiny of FX markets and particularly the related costs.

EXAMPLE

How currency movements can affect a pension fund's returns

JULY 2013

UK plc Pension Fund views Acme Inc. as a growth opportunity and sets a target equity price of USD 90.00

They purchase 100,000 stocks at USD 75.00 costing the fund USD 7,500,000

The GBPUSD exchange rate at that point is 1.50 so the sterling cost is GBP 5,000,000

JULY 2014

Acme Inc. stock reaches the USD 90.00 target

UK plc Pension Fund sell their 100,000 position, realising USD 9,000,000 – a healthy USD profit of 20%

The GBPUSD exchange rate at that point is now 1.70 so converting the USD 9,000,000 back to sterling reaps GBP 5,294,118 due to the depreciation of the value of GBP to USD

Therefore the net sterling return to the fund is just 5.9% – significantly lower than the 20% equity gain

1 From a period ranging from Q1 2015 to Q3 2015. As at September 2015. www.bankofengland.co.uk/markets/Documents/femrjun15.pdf

3 THE FX MARKET

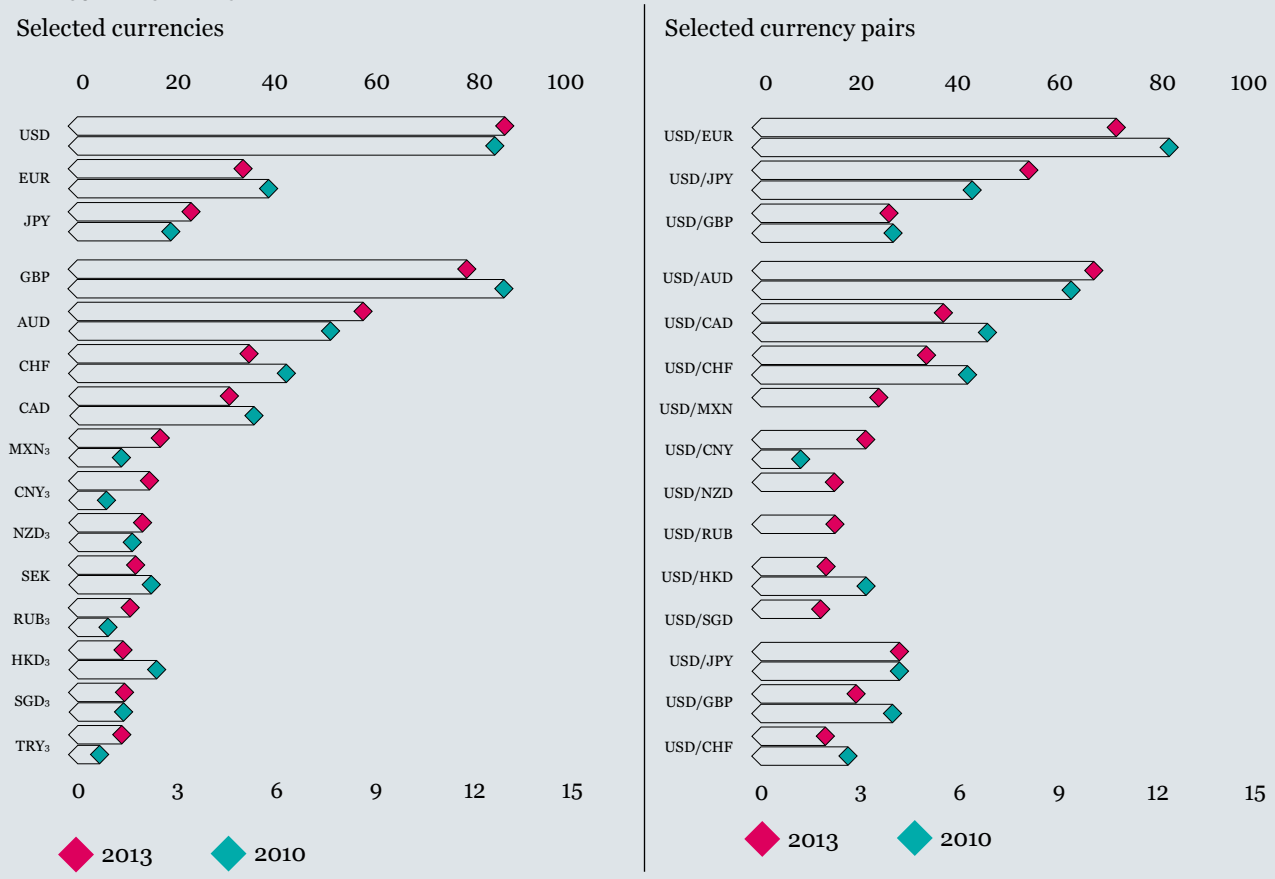
A. HOW IT WORKS

The FX market is by far the largest market in the world by volume, averaging over USD 5.3 trillion per day.[2] The FX market is unique not just due to its immense volumes and liquidity, but also that it has continuous global dispersion and operates 24 hours a day except weekends, ie from Sydney open at 22:00 GMT on a Sunday until 22:00 GMT Friday at New York close.

There is no central marketplace for currency exchange. Trade is conducted OTC via a large number of market participants and prices fluctuate ultimately due to supply and demand, but with many underlying factors influencing these.

There are currently 180 recognised currencies in the world, which equates to over 32,000 different currency pairs or combinations that can be exchanged; however the major currency pairs make up by far the most significant percentage of all global volumes. In fact the US dollar remains the world's dominant currency, representing 87 per cent on one side of all FX transactions.[2]

FX MARKET TURNOVER BY CURRENCY AND CURRENCY PAIRS



Source: Triennial Central Bank Survey; BIS calculations. April 2013

2 www.bis.org/publ/rpfx13fx.pdf

The trading of FX occurs across three sessions: the European, Asian and United States trading sessions. Although the sessions overlap, the main currencies in each market are traded mostly during those market hours. This means that certain currency pairs will have more volume during certain sessions.

DID YOU KNOW?

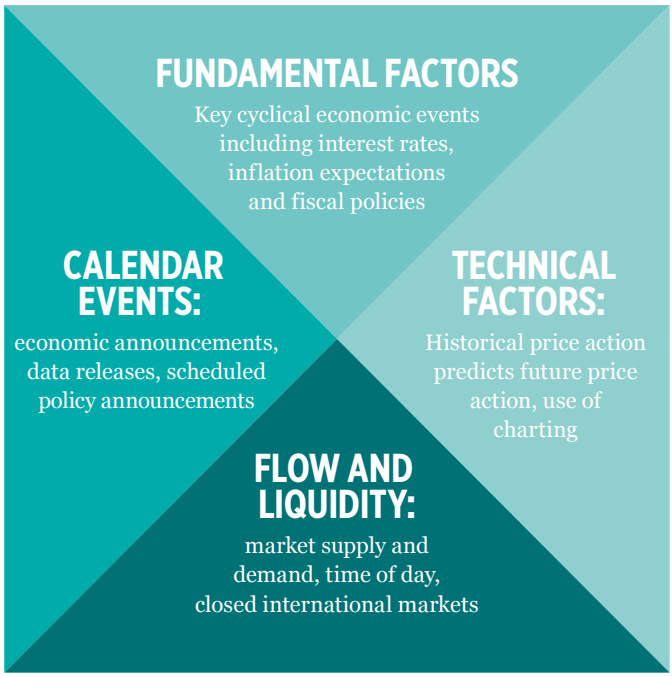
- All currency pairs are quoted as one per unit of another and there is a market convention for all recognisable pairs ie EUR/USD, GBP/JPY, EUR/GBP etc.
- Each currency pair's spread between the bid / offer is determined by the liquidity in the underlying market, which is variable and driven by a variety of factors, including volatility, holidays and data releases etc.
- Currency spreads are referred to as 'pips' which can vary between currency pairs, eg GBP/USD is traded to 4 decimal places (eg 1.5745) therefore 1 pip equates to 0.0001 but USD/JPY is traded to 2 decimal places, so 1 pip equates to 0.01.

Nations may choose to follow different currency regimes for their currency, which affects the way these can be traded depending on their economic policies and approaches.

Greater liquidity & volume Lower costs / risks	Free floating currencies are allowed to be traded globally where officials take no action to influence the exchange rate, eg Eur ego (EUR)
	Managed currencies, while generally free floating, can be influenced by the local monetary authority taking action to defend a given rate of exchange depending on perceived economic need or political demands, eg Swiss Franc (CHF)
	Pegged currencies are those where the central bank maintains their currency in relation to another (often the US dollar) and which then moves accordingly, eg the Hong Kong Dollar (HKD) to the US Dollar
Lower liquidity Higher Costs / risks	Restricted currencies are not openly traded on the market for delivery, eg Indonesian Rupee (IDR), South Korean Won (KRW)

B. WHAT ARE THE MARKET DRIVERS?

Many factors can affect prices and volatility in the FX market. The main ones are shown here:



C. FX MARKET EVOLUTION

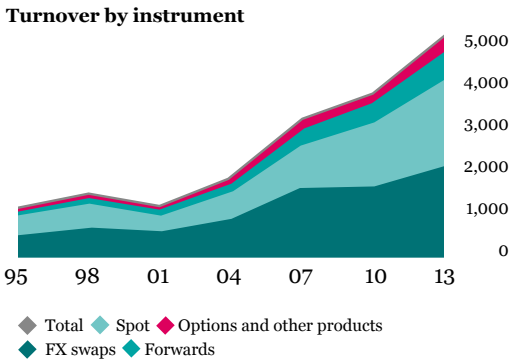
The Bank for International Settlements Triennial Survey of FX and Derivatives Market Activity ("the Triennial") shows that FX market volumes are consistently climbing.[3] The Triennial covers 53 countries and represents the most comprehensive effort to collect detailed and globally consistent information on FX trading activity and market structure. Due to the decentralised structure of the FX market, where deals take place OTC and where liquidity is fragmented across different venues, the market is rather opaque and quantitative information on market activity quite sparse. This increase is testament not only to the demand for FX as an asset class but mostly as a by-product of the increasing diversification of international asset portfolios (as has been seen in pension schemes across the UK), to counter low returns in domestic markets as well as aiming to reduce risk.

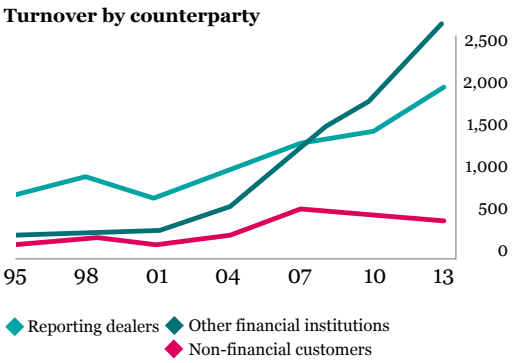
In the 1990s the FX market was a two-tier market, with no direct market access and especially tight pricing for the majority of participants. While that has fundamentally changed, the top of the market is still dominated by the largest commercial banks and securities dealers.

The availability of electronic platforms, coupled with the proliferation of FX prime brokerage (allowing smaller banks, hedge funds and other players to participate more actively in the FX markets) has contributed to this evolution. This has in turn helped to drive continued growth and added to increased volatility in FX markets:

GLOBAL FX MARKET TURNOVER[3]

Net-net basis 1 daily averages in April, in billions of US dollers





1Adjusted for local and cross-border inter-dealer double-counting

Sources: Triennial Central Bank Survey, BTS calculations

3 www.bis.org/publ/rpfx13fx.pdf

D. WHO ARE THE MARKET PARTICIPANTS?

The anatomy of the FX market is constantly changing, as detailed in the Triennial. This divides FX market participants into three main segments:

1. Reporting dealers: large investment and commercial banks participating in the inter-dealer market and large securities firms
2. Other financial institutions: all other FX market end users broken down further into the following:
   a. Non-reporting banks – smaller regional banks and securities firms
   b. Institutional investors – mutual and pension funds, insurance companies
   c. Hedge funds and proprietary trading firms
   d. Official sector financials – central banks, sovereign wealth funds
   e. Other – all others eg retail aggregators
3. Non-financial customers: any not included above eg corporations and private individuals

The Triennial shows us that the greatest rise in volumes has been driven by the 'Other financial institutions' sector as shown in Graph 2 below. While the inter dealer market has continued to grow, this is more muted and institutional investors now account for 11 per cent of global daily FX volumes, equivalent to over USD580billion.

While much reduced from their dominance of the 1990s (when they were responsible for 63 per cent of all volumes), the top-tier interbank market still accounts for 39 per cent of all transactions[4] in the global FX market (see Graph 2). The top 10 major FX banks command the largest proportion[5] of this, transacting over USD1.56 trillion, or almost 30 per cent of the daily volume.

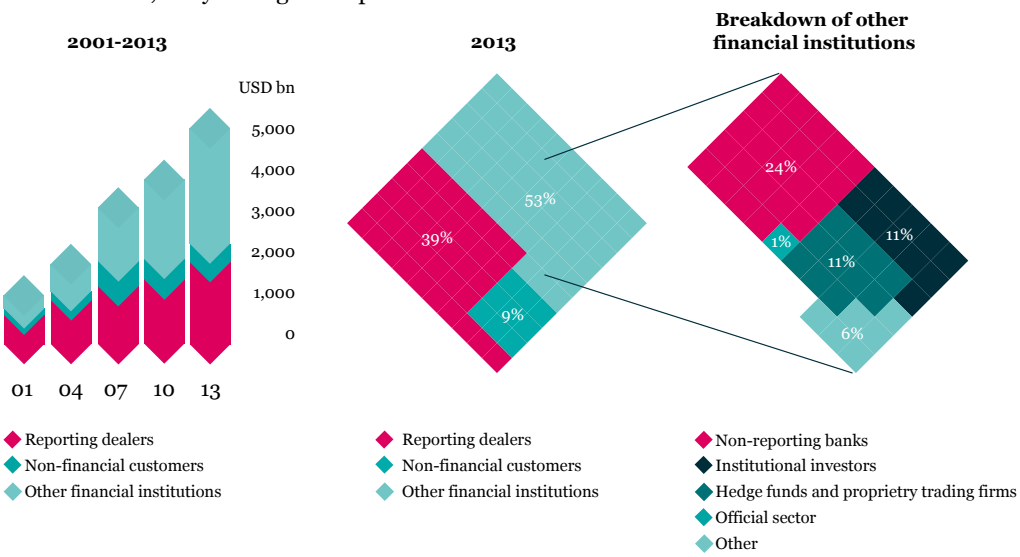
E. FX INSTRUMENTS

The key FX market instruments can be traded:

- **Spot** – The simplest form of FX instrument and a direct exchange between two currencies, usually with settlement for two-day delivery (some currency pairs have one-day delivery, eg Canada & Turkey).
- **Outright or forward** – An FX transaction between two parties at a pre-agreed price for settlement on any date that is not spot, eg trade date plus three days, and also for a date sooner than spot – these are generally referred to as:
  - **Cash** – an FX trade for settlement on the same day as trade date, ie today
  - **Tom** – an FX trade for settlement tomorrow, ie trade date plus one day
- **Non deliverable forward or NDF** – For markets with restrictions on settlement, this is effectively a 'contract for difference' whereby one leg will be in a freely tradeable currency (usually the USD). These are used for either hedging or speculation. The restricted currency's notional amount then has an agreed fixing date (usually two days prior to the settlement date) set by the local market at a fixed time and this is then offset by an equal and opposite amount in the restricted currency, resulting in a settlement in the deliverable currency amount only. No restricted currency changes hands, therefore an onshore account in the local restricted currency is not required.

FOREIGN EXCHANGE MARKET TURNOVER BY COUNTERPARTY[4]

Net-net basis, daily averages in April



4 www.bis.org/publ/rpfx13fx.pdf
5 Euromoney FX survey 2015

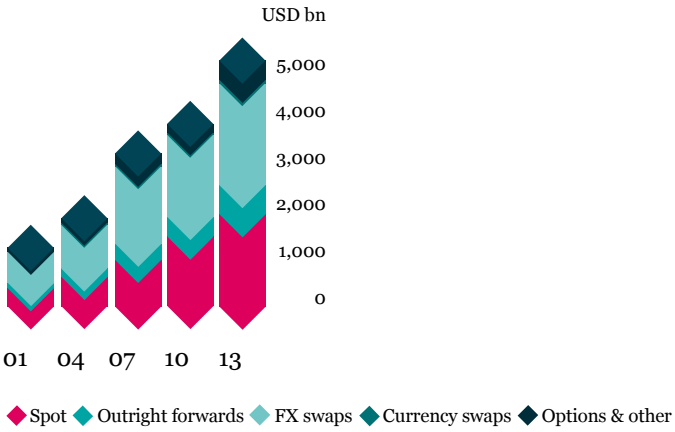
- **Swap or rollover** – a two-legged FX trade between two parties where they exchange currencies for a predetermined length of time. The transaction then is reversed at a pre-agreed future date. The difference in price on the near and far leg of these instruments is based on interest rate differentials between the two currencies involved.
- **Future** – a forward FX transaction traded on exchanges with standard contract sizes and settlement dates (predominantly three months)
- **Options** – derivatives on FX where the owner has the right, but not the obligation, to exchange one currency for another at a pre-agreed rate on a specified date. There is an up-front cost to FX options, referred to as a premium. There are various types of options:
  - **Vanilla** – the simplest form of option incorporating two currencies with one being a put, ie the right to sell one currency, and a call, ie the right to buy the other currency. Can incorporate strategies such as straddles and strangles
  - **Exotic** – these are options that as well as having an agreed date and rate can have multiple other factors, such as agreed rates that they knock-out (ie cease to exist) or knock-in (ie actually come into being at an agreed level), or much more complex structures and agreements, eg calendars, windows

While the complexity of modern FX instruments has continued to evolve, FX swaps and spot transactions still largely dominate the market, making 80 per cent of market volume.[6] Swaps just beat spots to be the largest by volume

FOREIGN EXCHANGE MARKET TURNOVER BY INSTRUMENT[6]

Net-net basis, daily averages in April

2001-2013



6 www.bis.org/publ/rpfx13fx.pdf

4 CURRENCY MANAGEMENT ALTERNATIVES

A. APPROACHES FOR PENSION FUNDS

There are several approaches to currency management that can be employed by pension funds. These provide varying degrees of control over pricing, transparency and cost; from an in-house dealing team to fully outsourced execution.

i. In-house

Pension funds employ an internal FX execution team which directly trades and manages the fund's FX flow with underlying counterpart banks to cover all FX requirements: transactional, hedging or speculative.

Benefits	Downside
In-house approach may offer the pension fund: - Maximum control over the whole currency management - Execution expertise can be employed aligned to the pension fund investment objectives	In-house approach is the most costly: - Investment: staff and trading systems or infrastructure - Administration: the fund is responsible for credit agreements and documentation with multiple counterparties - Regulation: the pension fund takes responsibility for regulatory reporting - Operational risk: the fund remains responsible for the calculation aspects and execution risk

ii. Manager third party execution

When a pension fund's investments are managed by external investment managers, the responsibility for FX management can be passed on to the external manager. The investment manager can have ultimate discretion over all FX management pertaining to their investments and the counterparties with whom it is executed. They will likely execute FX across multiple mandates with multiple banks, which may differ from the objectives and interests of the pension funds.

Benefits	Downside
Managers executing third party FX may offer the pension fund: - Specialist FX trading desks and expertise - Provide regulatory reporting - Take on operational risk of FX transactional settlement	Leaving FX to managers can mean the pension fund suffers from: - Lack of netting across multiple mandates and managers - No transparency over FX costs as they may not be benchmarked or advised of an FX execution policy - Managers may not have specialist FX skills - Exposure to counterparts that do not have an acceptable credit rating for the pension fund - FX management will differ between different managers, thus a clear and robust FX management policy cannot be implemented - Custodians potentially charging for third party payments to many different FX counterparts

iii. Custodian execution

This is when responsibility for a pension fund's FX requirements is left to the fund's custodian. As non-base currency securities are bought / sold by the fund or their managers, the custodian is responsible for executing purchases of non-base currency to fund the security, or repatriating the proceeds back to the fund's domestic currency.

Benefit	Downside
Custodial FX: - Convenient execution - Provide regulatory reporting - Take on operational risk of FX transactions with custodian	Leaving all FX to the custodian can mean: - The pension fund relinquishes control and governance over FX - Execution by these methods may be offered with no explicit charge and can be expensive and lack transparency - Pension fund has little or no control over FX costs and therefore cannot budget accordingly - FX execution is not undertaken by a global FX specialist or top tier FX bank

iv. Outsourcing

Pension fund costs need to be quantified, qualified and controlled. To control FX costs, these must be recognised and therefore can be directly governed by the fund as opposed to being left to the discretion of a third party. Many proactive pension funds choose to outsource their FX management to a specialist FX bank or provider to avoid relying on an external asset manager or incumbent custodian, or incurring the expense and operational burden of maintaining an in-house execution team.

Consolidation of FX flows across managers and custodians reduces the volume of trades, thus directly reducing costs due to the spreads involved. Outsourcing FX flows can also facilitate multiple netting opportunities across managers and schemes, by using specialist netting platforms which have been created for the industry to match buy and sell orders.

By outsourcing FX management, the pension fund can demonstrate control of costs as these are pre-agreed with the provider and are clearly and transparently defined. Pension funds also benefit from high quality execution methods carried out by specialists in the FX market and gain economies of scale that would not be possible across multiple sources.

Benefit
Some typical benefits of outsourcing FX: - Netting of FX flow efficiently can help reduce volume and therefore costs - Universal pricing across different investment managers and custodians simplifies accounting and any analysis - Trading against independent benchmarks provides full transparency - Automated secure transfer of trade instruction and settlement - The operational risk is outsourced to the provider

WHAT YOU SHOULD CONSIDER:

Careful monitoring should be carried out by the fund to provide clear evidence of transparency and best execution to the trustees and investment committee.

An increasingly common method by which many Pension Funds evidence transparency is through the use of 3rd party Transaction Cost Analysis (TCA) providers. When engaging with a TCA provider it is important to understand the assumptions they are making and the basis by which they assess transaction costs, as methodologies used can vary greatly across providers, thus it is important to ascertain whether the TCA methodology is applicable to the fund's execution model.

B. APPROACHES FOR PENSION FUNDS

Whatever approach a pension fund chooses for its FX execution, three different methods can be employed:

Principal trading – The fund buys or sells currency directly from the counterparty bank's trading book, thus transferring risk from the fund to the principal.

Agency trading – A broker or manager acts as the fund's agent, trading and interacting with the counterparty bank(s) on the fund's behalf, without having ownership of the underlying assets or risk transfer.

Benchmarked execution – With an increased focus on transparency, many funds have moved towards a benchmarked execution model for their transactional and hedging FX flow.

DID YOU KNOW?

The World Markets Company plc (WM) provides an exchange rate service in conjunction with Reuters that publishes FX benchmark rates at fixed times throughout the global trading day. The service was introduced in 1994 to provide a standard set of currency benchmark rates so that portfolio valuations could be compared with each other without differences caused by exchange rates.

The WM Reuters fix is the most widely used pricing mechanism and is regarded by many as the only way to demonstrate full FX execution transparency in an OTC market. As of 1 April 2015, the WM Company received permission from the UK's Financial Conduct Authority to act as an authorised benchmark administrator for the provision of the WM Reuters Closing Spot Rates. Many pension funds execute their FX flow at the WM fix. By netting their buy and sell orders prior to the fixing window and executing just the netted figure at the WM fix, pension funds can minimise the bid/offer spread whilst evidencing pricing transparency.

5 CURRENCY IN PENSION FUNDS

As previously mentioned, currency can affect a pension scheme in multiple ways.

A. TRANSACTIONAL

The increased diversification of pension fund investment portfolios has generated increased investment in international equities and fixed income, and thus a greater volume of non-sterling underlying transactions. These need to be paid for in their local currency, hence the requirement to execute FX transactions from the sterling base of a UK pension fund. This is the major FX consideration for pension funds.

As this demand for FX increases, various aspects need to be taken into consideration.

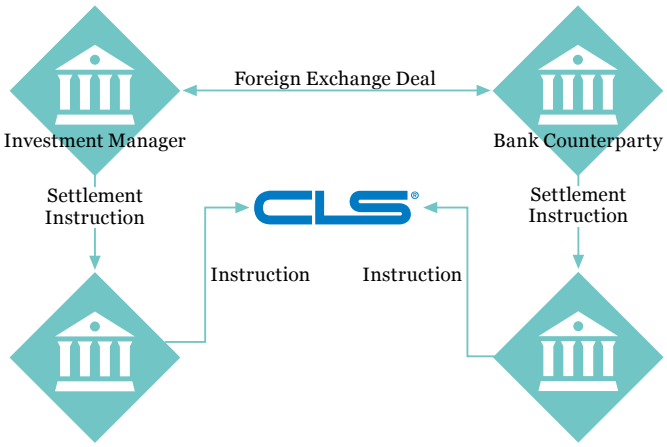
i. Market risk

The primary point to consider when facilitating FX execution is the market or price risk. Various methods allow for the transfer of risk as detailed in the previous section, and in order to quantify this the pension fund needs oversight and control.

ii. Settlement risk

All FX transactions potentially bear the risk of losses due to settlement risk. Settlement risk, also known as 'Herstatt risk,' is widely recognised as the most significant systemic risk to participants in the FX market, meaning its mitigation is a high priority. The settlement risk is the exposure of the pension fund to counterparty bankruptcy or default risk that lasts from the time the FX trade is executed, before the actual delivery of their leg of the transactions – ie the time delivery lag between two currencies.

Continuous Linked Settlement (CLS) operates a multicurrency cash settlement system to mitigate settlement risk for the FX transactions of its members and their customers, sending and confirming automated messages to ensure same-day settlement.



DID YOU KNOW?

Herstatt Bank was a privately owned bank in Cologne. It went bankrupt on 26 June 1974 in a famous incident illustrating settlement risk in international finance. That day, a number of banks had released payment of Deutsche Marks (DEM) to Herstatt in Frankfurt in exchange for US Dollars (USD) that was to be delivered in New York. Because of time zone differences, Herstatt ceased operations between the times of the respective payments, thus receiving all the DEM – however the counterparty banks did not receive their USD payments.

iii. Credit and counterparty risk

While most transactional FX is traded for short-dated settlement (normally spot or within five days of the trade date) to match underlying equity settlement, the majority of currency hedging and speculative positioning is done using forward FX contracts. Forward FX contracts are OTC instruments which are negotiated directly between the two parties involved in the agreement (the fund and bank), rather than on a central exchange. As a result, there is a risk that either counterparty may default on its side of the contract at settlement. Therefore, this risk is managed through rigorous credit checks and constant monitoring of each counterparty's creditworthiness.

While this incorporates settlement risk, it also requires the pension fund to be vigilant in checking longer term FX exposures. Consolidation of FX requirements with a leading global FX house, with a strong balance sheet and high market capital, reaps multiple benefits by reducing counterpart risk amounts due to netting possibilities, plus ensuring the pension fund risk is against an entity with a high credit rating.

iv. Restricted markets

Freely deliverable currency requirements can be traded with many market participants, but ultimately if they are not executed to facilitate settlement of the underlying trade the pension fund can go overdrawn in the short term. Although this is not ideal, it does not mean that the underlying equity transaction fails – however the same cannot be said for restricted currency markets. In the case of those currencies with imposed restrictions, the FX transaction has to be executed either simultaneously or prior to the underlying transaction to ensure settlement and to avoid potential fines and penalties.

WHAT YOU SHOULD CONSIDER:

Certain regimes can have very different requirements. To ensure that penalties are not incurred, pension funds should look to a counterpart with global reach and experience in these markets.

v. Costs

When considering FX transactions, one of the most essential considerations for a pension fund is to control costs. As a bespoke transaction between two parties and as an OTC product, FX costs have often been hard to quantify (and in some cases still are). Given the market data now available, however, this should no longer be the case. Most importantly, in order to control costs these must be captured, recognised and directly managed by the pension fund as opposed to being left to the discretion of a third party without a transparent pricing agreement and reporting.

FX volumes directly affect FX costs: the higher the volume of trades, the higher the cost. One way to reduce volumes is to net and aggregate across managers or custodians. This also negates bid / offer spread for netted trades. This can be achieved by outsourcing all FX to a single counterparty for management. Netting can potentially be further enhanced with potential group platforms whereby multiple pension funds can sign an agreement to net across the funds on the platform.

The biggest unknown cost for FX is ultimately spread. Knowing when or how FX trades are calculated is essential for achieving control of these. Pension funds can utilise the transparent, independently published, regulated WM Reuters benchmark[7]. Pricing around this with a risk spread is offered by the major FX banks and allows pension funds to provide evidence of tightly priced execution while retaining oversight and control of costs.

B. RISK MANAGEMENT

Pension funds' international investments not only require local currency transactional funding, but the exchange creates exposure to currency swings and hence adds volatility to international asset returns. Currency risk management, or hedging, is about mitigating that risk. The pension fund needs to ensure the process is transparent and efficient, while keeping its administrative burden to a minimum.

i. Quantifying FX risk and effect

Currency exposure is the most universal risk international portfolios are exposed to, but it is also the most underestimated one. Many pension funds do not have any FX risk hedging strategies in place, when they do so for other asset classes.

WHAT YOU SHOULD CONSIDER:

When looking at quantifying FX risk of a portfolio, the pension fund needs to consider a number of aspects:

- Market risk
- Liquidity risk
- Operational risk
- Regulatory risk
- Cost

With any international asset, the performance is composed of the underlying asset returns and the inherent currency exposure. The pension fund needs to decide how to treat this FX risk.

The simplest way to hedge FX risk is via FX swaps. An FX swap is in effect the loan of one currency (the pension fund base) against another currency for the set period. The difference from the spot rate is based on the interest rate differential between the two currencies expressed in pips. These 'forward points' will move in line with expected interest rate forecasts, and while they do fluctuate they are less volatile than the FX spot market.

A hedging, or overlay, provider will work with the pension fund to determine the most efficient FX swap (or roll) frequency, usually monthly or quarterly. As the maturity of each FX swap, or rollover approaches, the next FX swap is placed (this is known as 'rolling' the hedge), with any adjustments in the spot market generating cash flow requirements, both positively and negatively. These need to be taken into careful consideration in order to ensure the pension fund has the cash required, due to the difference in FX Rates, or they can be managed with different hedging products.

7 www.wmcompany.com/wmr/index.htm

EXAMPLE OF A HEDGE

The benefits a hedge can have in protecting underlying returns against adverse currency movements

JULY 2013

UK plc Pension Fund views Acme Inc. as a growth opportunity and sets a target equity price of USD 90.00

They purchase 100,000 stocks at USD 75.00 costing the fund USD 7,500,000

The GBP/USD exchange rate at that point is 1.50 so the sterling cost is GBP 5,000,000

They simultaneously put on a rolling three-month swap, ie to buy back GBP / sell USD 7,500,000

The forward rate for this is -10 points, so a net rate of 1.4990

They continue to roll this quarterly at the prevailing market rates

JULY 2014

Acme Inc. stock reaches the USD 90.00 target

UK plc Pension Fund sell their 100,000 position, realising USD 9,000,000 – a healthy USD profit of 20%

The cumulative effects of the quarterly swaps, as each quarter they have 'locked in' an exchange rate, have accumulated GBP 5,013,353

Closing out the extra USD 1,500,000 profit at the market rate of 1.70 realises another GBP 882,353

Total GBP proceeds of the FX swaps and final revenue repatriation equals GBP 5,895,706 – a net sterling return to the fund of 17.9%, the small reduction from the equity revenue being the 'cost' of the hedge, significantly better than having had an unhedged equity position.

ii. Hedging products

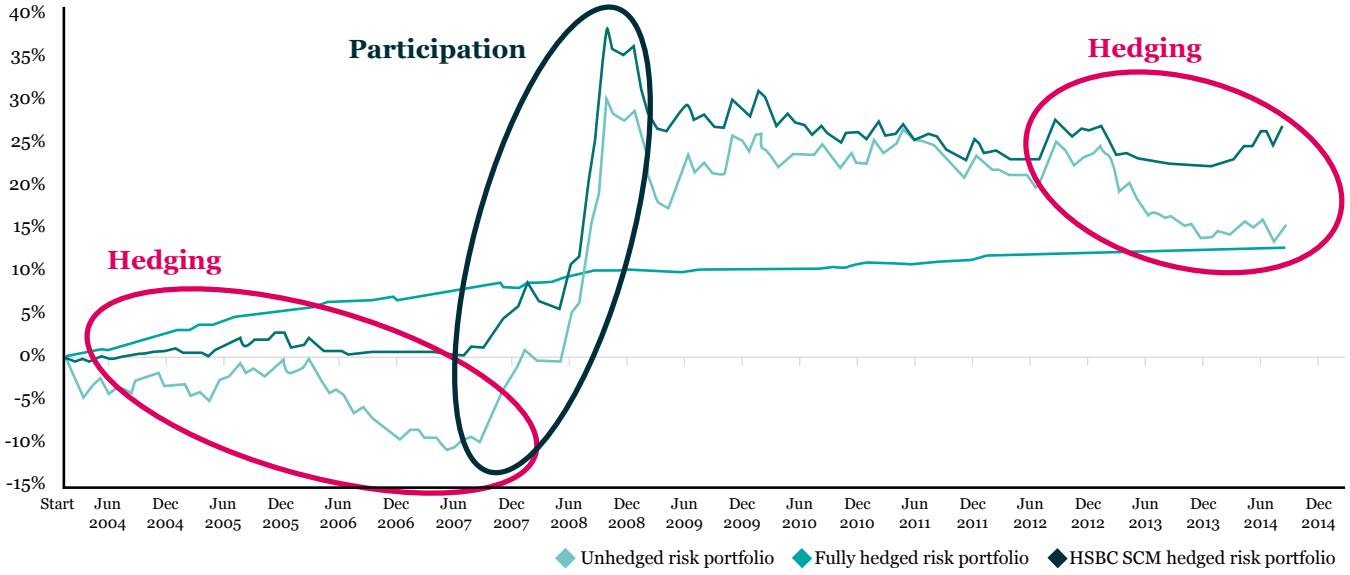
- **Passive hedging** – A static hedging solution is a fixed hedge ratio. This is a range between 0% and 100%, with 0% being completely unhedged and 100% being fully hedged. An unhedged portfolio will be exposed to all movements in the underlying FX rate, be it positive or negative. On the flip side a fully hedged portfolio "locks in" an FX rate and thereby almost completely eliminates any future uncertainty. This does mean that if the currency moves in the fund's favour, it will not be able to benefit. A combination can be achieved by choosing a range somewhere in between, eg the 50% hedge ratio.
- **Dynamic hedging** – A dynamic hedging model will aim to strategically alter the hedge ratio throughout the mandate. These can take various forms but ultimately their aim is to mitigate risk and provide the pension fund with full protection against adverse currency moves while allowing it to participate and benefit in positive moves. Dynamic hedges can also significantly reduce cash requirements due to the mark-to-market of the positions.

Dynamic hedging models can be based on a qualitative strategy (discretionary management by currency specialists), or a quantitative strategy (a rules based model driven approach). While each strategy has a different approach the fundamental aim is risk mitigation. Dynamic hedging products aim to have a higher hedge ratio in periods of negative performance and unwind these hedges in periods of positive performance, limiting downside risk, while leaving the potential for upside performance.

Dynamic Hedging Example

The below chart details the differing cumulative returns an unhedged, 100% hedged or dynamic hedged currency risk portfolio of a UK Pension Fund with the following non-GBP exposure:

USD assets = **41.67%** EUR assets = **41.67%** JPY assets = **16.67%**



The ellipses highlight those times when a Dynamic hedge either invokes a hedge, therefore removing currency risk when the underlying currencies move against GBP and participation where the hedge is reduced, thus allowing the pension to gain advantages of GBP movement relative to the exposure currencies.

The above portfolio produced the following cumulative returns during the illustrated period:
Fully hedged position **+12,6%** Unhedged position **+14,9%** Dynamic hedge **+26,4%**

C. ALPHA GENERATION

Currency movements are directly impacted by factors including interest rates and fundamental changes globally, therefore managers exist who utilise these macro changes to deliver returns. Alpha generation or absolute return currency strategies can be implemented to achieve a positive total return from the active trading of global currency markets. Pension funds can choose to invest directly in these markets via speculative positions, but this is extremely high risk and is best outsourced to specialist currency managers. Managers can employ various different currency strategies, which can be combined to create a more balanced portfolio. These strategies generally fall into four categories.

- Fundamental: discretionary trading by currency strategists based on macroeconomic data, price action and interest rate indicators
- Systematic: analysis of historical price action to predict future price action
- Carry trade or forward rate bias: exploiting the difference in interest rates by investing in higher interest rate currencies, funded with lower interest rate currencies
- Emerging markets: exploit the expectation that emerging market currencies will appreciate relative to developed markets' currencies due to the superior growth in emerging economies

WHAT YOU SHOULD CONSIDER:

Pension funds must bear in mind that FX as an alpha product would fall under alternative investments and is potentially an unregulated market.

6 OPERATIONAL PAYMENTS

The world is becoming increasingly interconnected and pension providers of all sizes need to be able to easily make payments across the globe in to recipients in local currency. In this fast-paced landscape of mobile apps and expectation for immediacy, global citizens demand this from the business world, expecting to be paid now and in their own currency.

Companies need to pay everyone from global employees, retired pensioners, vendors and suppliers. Decision-makers in these companies are looking for automated solutions to facilitate payments, especially pensions, in local currency and with low costs. Many of these payments may be required to retirees based abroad, value added services such as SMS messages alerting when to expect the payment may be key for this client base. With the globalisation and digitalisation trends, pension funds are finding that more retirees are moving abroad and therefore reaching these pensioners can become more expensive using traditional wire or high value transfers.

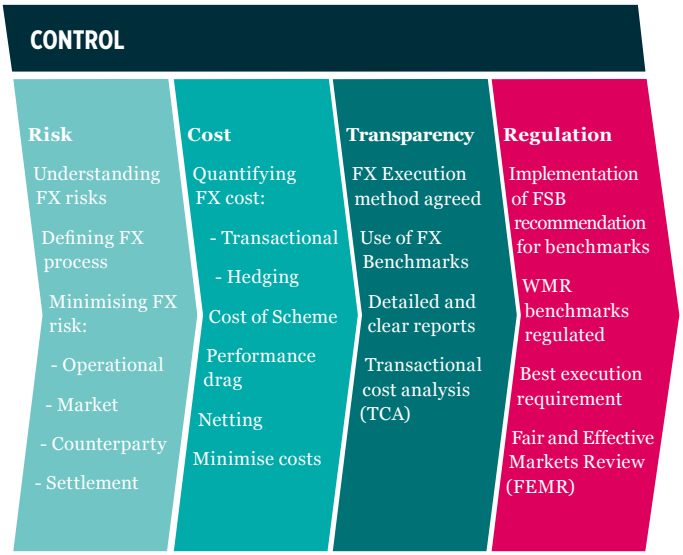
One way to respond to these challenges is seeking a platform that offers a truly effective way to processes high volumes of payments, primarily for pension payments, but can also be utilised for vendor payments and other overseas costs. The ability to make low value payments is of growing interest to pension funds who are also asking for full control and transparency to the exchange rates, giving everyone confidence in the end-to-end process. Such services are best outsourced to experts in this field, with strong and robust systems and balance sheets to lessen the burden of the pension fund.

7 INDUSTRY THEMES

There is no doubt that 2014 was a seismic year for the FX market with the investigations into both Libor and FX benchmarks resulting in a great deal of change. Some of these changes will benefit pension funds and policyholders, and some are yet to be seen but should still be noted.

Having rarely reached the top of pension funds' agendas in the past, FX management has suffered from a lack of attention, understanding and progress. With the spotlight now firmly pointed at the industry and its participants, however, we are finally seeing change occurring which should result in a better outcome for clients. As a result, pension funds have an obligation to understand better the following areas, which could in turn provide greater overall control:

- Risk
- Costs
- Transparency
- Regulation



A. REGULATION

With defined benefit schemes making way for defined contribution schemes, the risks and costs move from the plan sponsor onto the policyholder. This has been noted by trade bodies and regulators and there is a move towards a much greater level of control and granularity of costs, including FX costs.

What this means is that pension funds now have to look at the way they deal with FX management. Whether dealt with by their internal treasury desk, their custodians or third party managers, they need to consider some fundamental questions:

- Do we have any FX exposures – investment and liabilities?
- Do we understand how we have approached these exposures?
- Do we have efficient and robust processes in place to deal with these requirements?
- Do we have the ability to fully evidence these processes and results?
- Do we have an FX best execution policy in place?
- Are we in control of all our FX exposures?

These questions have led to a better understanding of the industry's FX requirements and are continuing to drive innovation and help achieving better results across the board.

DID YOU KNOW?

Beta FX refers to conversion to settle purchase or sale of Investments, plus fees, dividends and tax

Alpha FX refers to the use of FX to generate return and in respect of hedging a portfolio

B. MARKET CHALLENGES

The FX market is facing challenges ahead, and will likely see further changes and development over the coming years driven by regulatory change and client demand. Further investigation into the following items will be required:

- Existing FX benchmarks
- Development of newly tradable benchmarks
- Impact of regulation on FX market efficiency
- Transparency requirements in an off-exchange OTC market
- Restricted currencies

To highlight two from the list:

- Transparency requirements: We observe an increase in accurate and detailed trade reporting that allows market participants to analyse transaction costs. This sounds simple but if the FX trading is conducted by multiple providers (third party asset managers, custodian, FX overlay manager) the problem becomes more challenging. Even if all the data can be captured (timestamp, amount, direction price, counterparty and value date), FX forwards are not standardised in the same way as the spot price and therefore assessing execution efficiency relies on large assumptions.
- Restricted currencies: The level of reporting on currencies that are required to be executed by a local onshore agent remains very low. Although, increasing transparency is a growing requirement each country is governed by local laws and at present there is no global standard. This has an effect on pricing and execution efficiency and will need great industry coordination to deliver results to market participants. Currently a large disparity can be observed between an offshore reference rate and the actual onshore executable rate.

C. FUTURE CONSIDERATIONS

Regulation will drive change, and this will start with pension funds. FX is a major market, implicit in nearly every financial action on a daily basis, and may have been largely misunderstood by many pension funds. In addition to many forward-looking changes implemented by Stephen Webb MP, former Pensions Minister, Baroness Altman will need to work further with regulators to ensure a demonstrable, fair outcome for the man on the street – and that includes in FX matters.

8 GLOSSARY OF TERMS

Base currency

The first currency quoted in a currency pair on FX. It is also typically considered the domestic currency or accounting currency (eg EUR/USD, GBP/USD, USD/JPY).

Basis points

One basis point is equal to 1/1000 of 1% and is used to denote the percentage change in a financial instrument.

Bid

The rate at which a bank is willing to buy the base currency.

Broker

A broker is a middleman acting between a client and a market maker. A broker will charge a commission for their services.

Carry trade

An investment position of buying a higher yielding currency with the capital of a lower yielding currency to gain an interest rate differential.

Convertible currency

Currency which can be freely exchanged for other currencies or gold without special authorisation from the appropriate central bank.

Counter currency

The counter currency is the second currency in a currency pair (eg The USD is the counter currency in the EUR/USD pair).

Exchange rate depreciation

Currency which loses in value against one or more currencies.

Exchange rate risk

The potential loss that could be incurred from an adverse movement in exchange rates.

Fixed exchange rate

Official rate of exchange set by monetary authorities for one or more currencies. In practice, some fixed exchange rates are allowed to fluctuate between defined upper and lower bands.

Floating exchange rate

When the value of a currency is decided by supply and demand.

FOREX/FX

Abbreviations of foreign exchange.

Forward points

The interest rate differential between two currencies is expressed in exchange rate points. The forward points are added or subtracted from the spot rate to give the forward or outright rate.

Forward rates

The rate at which an FX contract is struck today for settlement at a specified future date.

Forward contract

Contract struck at the forward rate as specified above.

FX swap

A simultaneous transaction to buy and sell the same currency pair for different value dates.

Hedging

A hedging transaction is one which protects an asset or liability against a fluctuation in the FX rate.

Initial margin

The deposit required from a client when they transact a forward order.

Interbank rates

The FX rates large international banks quote other large international banks. The difference between the buy rate and the sell rate (the spread) can be around 0.07%. Normally the public and other businesses do not have access to these rates.

Interest rate risk

The potential for losses arising from changes in interest rates.

Margin

Cash deposit provided by clients as collateral to cover losses (if any) that may result from the client's FX trades.

Margin call

A demand for additional funds to cover positions.

Maturity

Date for settlement.

Offer
The rate at which a bank is willing to sell the base currency.

Open position
Any deal which has not been settled by a physical payment or reversed by an equal and opposite deal for the same value date.

Outright forward
FX transaction involving either the purchase or the sale of a currency for settlement at a future date.

Outright rate
The forward rate of an FX deal based on the spot price plus or minus the forward adjustment which represents the difference in interest rates between the two currencies.

Resistance
A price level at which you would expect selling to take place.

Roll or rollover
Where the settlement of a deal is rolled forward to another value date based on the interest rate differential of the two currencies, eg next day.

Settlement
Actual physical exchange of one currency for another between principal and client.

Spot contract
Spot means the settlement date of a deal which is two business days forward (for the majority of currencies).

Spot rate
The rate at which a FX contract is struck today for settlement two working days in the future.

Spread
The difference between bid and offer prices.

Stop loss order
An order to buy or sell when a particular price is reached either above or below the price that prevailed when the order was given.

Swap
Another term for a roll.

Support levels
A price level at which you would expect buying to take place.

Technical analysis
Analysis based on market action through chart study, moving averages, volume, open interest, formations and other technical indicators.

Value date
Settlement date of a spot or forward deal.

Volatility
A measure of price fluctuations.

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